Marine Policy

Investing in nature: Restoring coastal habitat blue infrastructure and green job creation

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Available online 2 June 2012

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http://dx.doi.org/10.1016/j.marpol.2012.05.020

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Abstract

This study examines the economic impact of the expenditures from the American Recovery and Reinvestment Act (ARRA) of 2009 that the National Oceanic and Atmospheric Administration (NOAA) administered for coastal habitat restoration projects around the United States. Estimates of the total jobs created as well as the average number of jobs created per million dollars spent are provided. The study shows that the 50 ARRA projects administered by NOAA in the first year and half generated a total of 1409 jobs. These habitat restoration projects created, on average, 17 jobs per million dollars spent which is similar to other conservation industries such as parks and land conservation, and much higher than other traditional industries including coal, gas, and nuclear energy generation.

This suggests that habitat restoration is indeed an effective way to stimulate job creation. In addition, habitat restoration has longer-term economic benefits, including future job creation in rebuilt fisheries and coastal tourism, and benefits to coastal economies including higher property values and better water quality. Therefore, investing in blue infrastructure habitat restoration is a green opportunity benefiting coastal economies and societies in both the short and the long term.

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Please cite this article as: Edwards PET, et al. Investing in nature: Restoring coastal habitat blue infrastructure and green job creation. Mar. Policy (2012), http://dx.doi.org/10.1016/j.marpol.2012.05.020

Table 1. Habitat restoration green job categories and employment rates per million dollars.

Restoration effort type (number of ARRA projects)	Range of restoration job types	Average number of jobs/Million US$
Marine debris removal (3)	Cleanup crew (laborers), small boat operators, administrative staff, marine salvors, welders, heavy equipment managers, lawyers, accountants	17.3
Fish Passage/Dam Removal (15) Improving access for migratory fish species such as salmon and reducing hazards	Environmental consultants, engineers, construction workers, landscapers, lawyers, scientists, administrative positions	18.2
Hydrologic reconnection (15) Restoring the flow of water to coastal systems and floodplains	Geologists, engineers, landscapers, heavy equipment operators, construction workers, helicopter pilots, biotechnologist, project managers	14.6
Invasive species removal (2) Removal of coral reef smothering invasive algal species	Pilots, construction workers, feral goat hunters, landscapers, administrative positions	33.3
Oyster reef restoration (5) Construction of reef of using shell and rock. Stabilizes the shoreline and promote oyster colonization	Barge, tug operators and loading crews, fishermen, scientists, technicians, biologists, divers, mining and quarry workers, truck drivers, project managers, outreach specialists, administrative positions	16.6
Riparian restoration/living shorelines (4) Restoring the habitat function in the areas between land rivers and streams.	Construction workers (including site foreman, surveyor, survey assistants, equipment operators, laborers, and dump truck drivers), Nursery workers, project manager, environmental consultants, archeological consultant, Graphic designer, administrative positions	19.0
All restoration types	Average jobs per million$	17.0

Table 2. Comparison of job creation per $1 Million investment for various industries.

Industry	Direct	Indirect	Induced	Total
Reforestation, land and watershed restoration and sustainable forest management	17.65	12.95	9.2	39.7
Crop agriculture	9.8	6.5	6.5	22.8
Livestock	6.4	9.1	6.2	21.7
Gas (heavy and civil constructions for pipelines−50% new and 50% repair)	12.05	3.93	5.912	21.888
Mass transit and freight rail construction	13	3.70	5.038	21.738
Roads and bridges: repair	11.1	3.69	5.527	20.317
Conservation (parks land and water conservation fund)	11.45	4.15	4.7	20.3
Water infrastructure	9.96	4.38	5.427	19.764
Aviation	9.7	4.30	5.264	19.266
School buildings	8.65	5.38	5.233	19.262
Building retrofits	7.7	4.7	4.96	17.36
Roads and bridges: new	8.7	3.94	4.834	14.474
Solar	5.4	4.40	3.92	13.72
Biomass	7.4	5.00	4.96	17.36
Smart grid	4.3	4.6	3.56	12.46
Wind	4.6	4.90	3.8	13.3
Electricity generation, transmission, distribution	5.32	4.50	4.696	14.512
Coal	1.9	3.00	1.96	6.86
Oil and gas	0.8	2.90	1.48	5.18
Nuclear	1.2	1.80	1.2	4.2
Financial industry	3.22	2.34	1.668	7.228

Note: Multipliers derived using IMPLAN 2.0 with 2007 data. Infrastructure multipliers and assumptions are presented in “How infrastructure Investments Support the US Economy: Employment, Productivity and Growth”, Political Economy Research Institute, January 2009. http://www.peri.umass.edu/236/hash/efc9f7456a/publication/333/.
Source: Heidi Garrett-Peltier and Robert Pollin, University of Massachusetts Political Economy and Research Institute[15].